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ABSTRACT

Beginning in 1992, Atlantic Community College, in New Jersey, conducted a 4-semester study to determine which factors resulted in student attrition and whether the factors that affected retention changed during the study period. The study population included 119 degree-seeking students who entered in January 1992 and who took the state's basic skills test, as well as 198 telecourse students from fall 1994 who took a learning and study strategies inventory. Outcomes for the 1992 students were tracked over the study period, while grades were analyzed for the 1994 group. Results from the study included the following: (1) academic success, measured by previous semester grade point average, was a strong determinant of retention for all semesters and for long-term attendance and graduation; (2) students who tested into developmental courses on the basic skills test and who completed a required developmental course during their first semester persisted at the same or a higher rate as students who tested at college-level, while developmental students who did not complete a developmental course in their first semester had significantly lower retention rates; (3) gender and ethnicity variables were not found to be related to retention; and (4) older telecourse students (i.e., over 24) were more successful than younger students, while there were no differences in success rates by gender or ethnicity. (TGI)

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From Theory to Practice: Using Retention Research to Guide Assessment Efforts at a Community College Level

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From Theory to Practice: Using Retention Research to Guide Assessment Efforts at a Community College

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Abstract. Using factors identified in national research on retention, a four-semester study (Spring 1992-Spring 1994) was conducted to learn which students are most likely to be retained at a community college. Demographic variables did not predict retention for these students, but academic variables such as early taking of required developmental work and previous semester Grade Point Average (GPA) did. Using this local database as a guide, an assessment of telecourse students was conducted to further refine the study of academic variables. Because several community colleges are now giving complete degrees by distance education, we wished to determine what learning strategies were used by successful students. A Learning and Study Strategies Inventory (LASSI) was given to students taking telecourses in Fall 1994 to determine whether a study strategy was linked to success. Results showed that LASSI scores depended on age; for students over 25, successful students scored higher on the LASSI scale :"Selecting the main idea."

Research on retention has shown that student persistence is a combination of two factors: entering student characteristics and the interaction between the student and the institution (Tinto, 1987, 1992; Astin, 1993; Mutter, 1992; Astin, Korn and Green, 1987). Based on this research, a longitudinal study was conducted using all first-time, degree-seeking, students who entered Atlantic Community College in Fall 1992. These students were followed semester-by-semester, to determine not only which factors resulted in student attrition, but also whether the factors that affected retention changed from semester to semester.

Because there are so many factors that can affect retention, our assessment efforts began with this longitudinal database so that future assessment effort would be able to control significant factors. Based on the factors identified in this database, the research questions was:

Given the introductory results on the LASSI test, can telecourse student success (defined as the attainment of a grade of A, B, or C) be predicted? Research has shown that in universities, personality characteristics predicted the achievement in televised-course students, with successful telecourse students tending to be more self-sufficient and less compulsive (Biner, et. al, 1995). However, research with community college students found that telecourse persistence is not related to psychological variables (Pugliese, 1994). High-risk community college students demonstrated auditory, tactile concrete, and group learning style preferences (Grimes, 1995), which may signal difficulty in learning by telecourse. The research question was to determine if there were study strategies, identified by the LASSI, that were used by students successful in telecourses. If there

were, then workshops could be established for all telecourse students targeted to these strategies.

Method

Participants

Longitudinal database: First-time degree-seeking students in New Jersey must take a test to determine whether they are ready for college work. In 1992, the test taken by all degree-seeking students was the New Jersey College Basic Skills (NJCBST) test. If the students are not reading at college level, they must take developmental reading courses before they can take general education college courses. If the students do not have math proficiency at the algebra 1 level, they must complete developmental math courses before they take college math. College math is required for all degrees. In this analysis, students who did not score into college level courses were tracked as developmental students, although that term is not used by the college.

In January 1992, students entering a community college were given a questionnaire to determine their intention to return at the same session in which they took the NJCBST. There were 119 students in the group; a special code was entered in the Student Information System (SIS) to identify this group, which enabled them to be tracked for four semesters. Each semester, through Spring 1994, information on academic progress was obtained from the SIS and merged with the demographic information and the information from the NJCBST and initial questionnaire. In reading, 65 students tested into developmental courses; in math, 91 students tested into pre-college level.

Telecourse students: In Fall 1994, 198 telecourse students from 8 sections took the Learning and Study Strategies Inventory (LASSI) at the orientation session. This represented 70.9% of the telecourse students for that semester (279 students). One faculty member who taught a telecourse decided not to participate (34 students) and 25 students from the other sessions did not complete the LASSI. Twenty-two students took more than one telecourse, but only took the LASSI once. Grades for these students were averaged and the combined GPA was used to determine success. There were only 3 students of the twenty two who succeeded in one course and failed another.

The telecourses used in this study used nationally developed tapes that are televised using the cable network. Students must attend the orientation session. Other meetings during the semester are determined by the instructor, and range from no meetings to five. Students submit their work through the mail, fax, or through electronic communication. The courses are three credits and all work must be completed by the end of the semester.

Results

Longitudinal database: Retention was defined as enrolling in at least one college credit course for the following semester. Chi square analysis was selected as the method of analysis relating to demographic and intention variables; the two groups were retained and non-retained students. T-tests for independent samples were used to analyze retention and previous semester GPA; the two groups were also retained and non-retained students.

Academic success, measured by previous semester grade point average (GPA), was a strong determinant for all semesters and for long-term attendance and graduation ($t = 3.112$, $p > = .002$). There was no significant difference in retention for gender (Chi sq .0094, df =1, p = .923) or ethnicity (Chi sq = 1.178, df = 1, p = .273). Students who stated at entrance an intent to transfer prior to earning a degree were less likely to retain after four semester or to graduate by Spring 1994.

Students who tested into developmental courses retained at the same rate as those who proved competency on the NJCBST. If developmental students completed a required developmental course during the first semester, they retained at the same or higher rate as non-developmental students. In contrast, developmental students who did not complete at least one required developmental course during the first semester had significantly lower retention to second semester, and were less likely to be attending the college or graduated by Spring 1994 (Table 1).

Table 1

Retention of Developmental Students

Subject		N	Retention
Math	Develop; Took course 1st semester	44	77%
	Develop; Did not take course 1st sem.	47	38%
	Non-developmental	28	76%
Read	Develop; Took course 1st semester	44	70.50%
	Develop; Did not take course 1st sem.	21	33%
	Non-developmental	54	62%

Retention rate increased from semester to semester. While 60.2% of the students returned for the second semester, by the fifth semester, 88% of the students attending the previous semester either returned or graduated.

Telecourse students: Success in the telecourse was defined as obtaining a grade of A, B or C. Students who dropped the course or who were listed by their teacher as No Assignments (NA) were kept in the population and were counted as not succeeding. Students who took multiple courses took the LASSI only once; the combined GPA for all courses was used to determine success. T-tests for independent samples were used; the groups were successful and non-successful students.

Of the entire group of 297 telecourse students (not just those who took the LASSI), 37.7% (111) were unsuccessful and 62.3% (186) were successful. For the 198 students who completed the LASSI, 32.3% (64) were unsuccessful and 67.7% (134) were successful.

There were no significant differences between the unsuccessful and successful groups on any of the ten LASSI scales.

For all telecourse students, not just those who took the LASSI, there were no significant differences between the groups based on gender or ethnicity (Gender: Chi sq 0.175, df = 1, p =.6758 ; Ethnicity: Chi sq = 0.392, df =1, p = .5314). . There was a significant difference between the groups when examined by birth year. Of the 149 students born before 1967 (over 24), 38 (25%) were unsuccessful and 110 (75%) were successful. For those students born in 1967 or after, 73 (48%) were unsuccessful and 76 (52%) successful. We confirmed this

difference by looking at telecourse students in other semesters. From Fall 1993 through Spring 1995, older students were more successful. This difference was also true for students in parallel, non-telecourse classes in Fall 1994; 80% of the older students were successful while only 62% of the younger students were successful.

Because of this difference in ages, we ran t-tests for independent samples on the older (born before 1967) and the younger (born in 1967 or after) students who had taken the LASSI for each LASSI scale. In this analysis, the younger unsuccessful group scored higher on each LASSI scale (TABLE 2). For the older group, the successful students scored significantly higher on the LASSI scale "Finding the main idea," and the unsuccessful students scored lower on all but two LASSI scales (TABLE 3).

(TABLE 2).

Lassi scores for telecourse students under 25

Subscale	Mean Successful	Mean Unsucess.	T	P	
Attitude	32.60	33.53	-0.780	0.440	
Motivation	31.58	31.80	-0.170	0.860	
Time Mgt	25.42	26.70	-0.910	0.370	
Anxiety	26.25	27.58	-0.960	0.340	
Concentration	27.92	29.23	-0.098	0.330	
Info. Processing	27.51	29.25	-1.360	0.180	
Main Idea	19.42	20.15	-1.000	0.320	
Study Aids	24.45	24.65	-0.150	0.880	
Self-Testing	26.92	29.45	-2.030	0.046	*
Test Strategies	30.74	31.98	-1.140	0.260	

* Indicates significance at the .05 level

TABLE 3
LASSI scores for telecourse students 26 and older

Subscale	Mean Successful	Mean Unsucess.	T	P	
Attitude	35.25	34.87	0.540	0.590	
Motivation	34.99	34.12	0.930	0.360	
Time Mgt	30.15	29.33	0.720	0.480	
Anxiety	27.99	26.08	1.340	0.190	
Concentration	31.25	30.54	0.730	0.470	
Info. Processing	29.65	30.12	-0.400	0.690	
Main Idea	20.73	18.83	2.690	0.011	*
Study Aids	24.90	23.83	0.940	0.350	
Self-Testing	29.02	29.58	-0.480	0.640	
Test Strategies	33.37	31.54	1.820	0.077	

* Significant at the .05 level

Discussion

Longitudinal database: The results from the longitudinal database are good news for community colleges. Variables over which the college has no control, such as gender and ethnicity, are not related to retention. Academic variables, which the college does have some control over, are important. The fact that students who tested into developmental courses and began the necessary work first semester did retain and graduate speaks well for the early identification and remediation of deficiencies. While Boudreau and Kromrey (1994) found that students in a first year orientation course had higher retention to second semester but did not have higher graduation rates, the students in this study did retain or graduate at a higher rate. Given this finding, colleges may wish to encourage students to take required developmental work early.

Telecourse students: The LASSI is an instrument that asks students to rate their study strategies. The fact that younger unsuccessful students scored higher on each scale than successful students may illustrate over-confidence. These students attempted the telecourse believing that they had the study skills

necessary to success. Students who were more cautious in their self-ratings were more successful. Teachers of telecourses may wish to be alert that younger students may need special assistance to be successful in these courses.

In older students, this pattern of over-confidence did not apply. Successful students rated themselves higher on selecting the main idea, a skill necessary when viewing information that is not cued by teacher stress or inflection. In a traditionally taught classroom the teacher often serves to direct students to the main idea. In telecourses, students must watch tapes and read texts without too many clues as to which information is important. Telecourse teachers may wish to be aware of the importance of using the syllabus, student contacts and study guides during the semester to direct students to the most important concepts in the course.

Although the findings on the relationship with age was confirmed for four separate semesters, the LASSI was only given to one group of students. We hope to give the LASSI to future telecourse students to see if these results can be replicated.

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